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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,221	08/19/2003	Yasuhiro Yoshioka	2870-0264P	3448
2292 7590 08/16/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER CHEA, THORL	
			ART UNIT 1752	PAPER NUMBER
			NOTIFICATION DATE 08/16/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

**Office Action Summary**

Application No.

10/643,221

Applicant(s)

YOSHIOKA ET AL.

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 10-16 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10-16 and 19-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/695,864.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

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**DETAILED ACTION**

1. This office action is responsive to the amendment on July 6, 2007; claims 1-5, 10-16, 19-21 are pending; claims 6-9, 17-18 have been canceled.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-5, 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 appears to be either awkward or confusing. The group  $R^{41}$  and  $R^{42}$ ,  $R^{44}$  and  $R^{45}$  appear to be twice recited. First recitation is  $R^{41}$  and  $R^{42}$  independently represent an alkyl group, an aryl group or a heterocyclic group; and  $R^{44}$  and  $R^{45}$  independently represent an alkyl group, an aryl group or a heterocyclic group. Second recitation is "wherein  $R^{41}$  and  $R^{42}$  which independently represent an alkyl group, an aryl group or a heterocyclic group, may be taken together to form a ring; when  $R^{43}$  represent  $-N(R^{44})(R^{45})$ , then  $R^{44}$  and  $R^{45}$ , each independently represent an alkyl group, an aryl group or a heterocyclic group, may be taken together to form a ring, or at least one of  $R^{41}$  and  $R^{42}$  which independently represent an alkyl group, an aryl group or a heterocyclic group, and at least one of  $R^{44}$  and  $R^{45}$ , each independently represent an alkyl group, an aryl group or a heterocyclic group, may taken together to form a ring. It appears that an alkyl group, an aryl group or a heterocyclic group recited as substituent for  $R^{41}$  and  $R^{42}$ ,  $R^{44}$  and  $R^{45}$  in three occurrences, and appears to be awkward and unnecessary. Also, the claim is unclear the applicants intend to claim the alkyl group, aryl group or heterocyclic group may be taken together to form a ring when they represent  $R^{41}$  and

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R<sup>42</sup>, R<sup>44</sup> and R<sup>45</sup>, or the pair of R<sup>41</sup> and R<sup>42</sup>, R<sup>44</sup> and R<sup>45</sup> may be taken to form a ring such as the ring such as exemplified in the specification disclosure on page 19, compound (8), and page 20, compound (17). In compound (8), contains a heterocyclic ring and a heterocyclic ring containing a nitrogen atom, and the compound 17 contains two heterocyclic ring having nitrogen atoms. The scope of the claims is not directed to the substituents such as R<sup>41</sup> and R<sup>42</sup>, R<sup>44</sup> and R<sup>45</sup>. See also the claiming at least R<sup>41</sup> and R<sup>42</sup>, and at least R<sup>44</sup> and R<sup>45</sup>, each independently represent an alkyl group, an aryl group or heterocyclic group, may be taken together to form a ring.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-5, 10-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed fails as originally filed to provide support for R<sup>41</sup>, R<sup>42</sup>, R<sup>44</sup> and R<sup>45</sup> as an alkyl group, aryl group or heterocyclic group, may be taken together to form a ring. The specification discloses the alkyl group, an aryl group and a heterocyclic group are attached to the nitrogen atom through a covalent bond, but fails to disclose a ring formed by those groups.

***Claim Rejections - 35 USC § 103***

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 1-5, 10-11 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Miura et al (U.S. Patent No. 6,248,512).

Miura discloses a photothermographic material having composition similar to that of the claimed invention. Note for instance the material in column 47-50, example 1, and sample in Table 1, which contains a phenol compound as reducing agent. The hindered phenol compounds are preferred reducing agent is disclosed in column 31-32. The compounds in columns 12-14 which are read on the compound of formula (IV) wherein two or more of  $R^{41}$ ,  $R^{42}$ ,  $R^{43}$ ,  $R^{42}$ ,  $R^{44}$ , and  $R^{45}$  may be taken together to form a ring, especially compounds A-29, A-36 which contains a carbonyl group directly connected to nitrogen atoms and formed a ring. This compound is within the scope of compound of formula (IV) when at least  $R^{41}$  and  $R^{42}$  and  $R^{44}$  and  $R^{45}$  may

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taken together to form a ring. See also the compounds B1, B2, B3, B5, B9-B12 in columns 15-16 which contains a carbonyl group directly linked to alkyl group, aryl group and heterocyclic group and the nitrogen atom substituted with an alkyl groups. These compounds within the scope of the compound of formula (IV) contains  $-N(R^{41})(R^{42})$  wherein  $R^{41}$  and  $R^{42}$  represents an alkyl, an aryl or heterocyclic group, and  $R^{43}$  represent an alkyl group. These compounds are similar to that of the groups presented in the specification as having hydrogen bond formation rate constant  $k_f$  of 20-4000. Thus, the compounds having hydrogen bond formation rate constant  $k_f$  of 20-4000 presented in the claimed invention is inherent to that taught in Miura. In the absence of showing otherwise, the examiner asserts that the claimed invention is either anticipated or would have been prima facie obvious over Miura.

9. Claims 12-16, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Bojora et al (US Patent No 3,667,959) and Miura et al (US Patent No. 6,248,512).

Bojora et al disclose a photosensitive and thermosensitive element containing sulfonyl group including that claimed in the present claimed invention in a photothermographic material such as the preferred compound in column 3, lines 10, 30; column 3, lines 10, 30, 65; the silver behenate, phenolic reducing agent, binder and photosensitive silver halide in column 5, lines 5-12. The silver halide is chemically sensitized with chemical sensitizer such as sulfur, selenium or tellurium compound (column 6, lines 17-26). Miura et al disclose the use of metal complexes of the metal belonging to Group VIII in column 27, lines 60-67. See also the hindered phenol in columns 31-32, and the polyhalogenate compound such as tribromomethylsulfonyl pyridine in column 48, line 38.

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Bojora et al do not disclose the metal or metal complex Group VIII to Group X presented in the claimed invention, but it has been known in Miura et al to use the metal complex to increase the sensitivity of silver halide grains. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to dope the silver halide with the metal taught in Miura et al to increase the sensitivity thereof, and thereby provide a material as claimed.

### *Response to Argument*

10. Applicant's arguments filed on July 6, 2007 have been fully considered but they are not persuasive because of the reason set forth above because of the reason set forth in the rejection above.

It is argued that : "This is in distinction to instant formula (IV), wherein the groups of R<sup>41</sup> and R<sup>42</sup> which bond to the nitrogen are not halogen. When R<sup>43</sup> is -N(R44)(R4S), R<sup>44</sup> and R<sup>45</sup> are not halogen. Thus, the structure of Miura et al, is represented by -C(=O)-N-halogen whereas the structure of the formula (IV) is represented by -C(=O)-N-(alkyl, aryl or heterocyclic group). Accordingly, Compounds A-29 and A-36 are not encompassed by the present claims."

It is the Examiner's position that the claimed compound is still within the scope of formula A-29 or A-36 of Miura et al. It is agreed that the substituents R41, R42, R44 and R45 which is bond to nitrogen atom is not a halogen, but an alkyl group, an aryl group or a heterocyclic ring when they are not forming a ring. However, the substituents R41, R42, R44 and R45 are not defined when they are used to form a ring. They encompass the halogen including the compound of formula A-29 and A-36 of Miura et al, and the ring claimed in the present invention can be any type of ring containing any substitutents. The applicants do not claim that when R41, R42, R44

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and R45 may be taken together to form a ring, R41, R42, R44 or R45 is an alkyl group, an aryl group or a heterocyclic group.

The applicant argue that: With respect to Compounds B-1, B-2, B-3, B-5, B-9 to 12, the Examiner will note that each compound actually has two amide groups along with HBr and Br-Br. For example, Compound B1 would have the following configuration wherein HBr forms hydrogen bond with the amide group as follows: A hydrogen bond is formed between the oxygen atom of the carbonyl group and the hydrogen atom of HBr and therefore the oxygen atom has substantially no acceptability of the hydrogen atom of p-FC6H4OH. Compounds B-1, B-2, B-3, B-5, B-9 to 12 each has two amide groups in a molecule. One amide group forms a hydrogen bond with HBr and the other amide group forms a hydrogen bond with Br-Br.. The oxygen atom of the other amide group also has substantially no acceptability of the hydrogen atom of p-FC6H4OH. The case is the same as compounds B-2, B-3, B-5, B-9 to 12. These facts are easily recognized by a person skilled in the art as stated by Mr. Mikoshiba in the MIKOSHIBA DECLARATION.

The argument is not persuasive since the applicants' argument and the Declaration submitted on July 6, 2007 are not factual. The Declaration fails to provide the Kf value of the compound taught in Miura et al, and the value of Kf of the compound claimed in the present claimed invention from 2- to 4000 is so wide that may inherently encompasses that of the Miura et al compound.

The argument with respect to the rejection of claims 12-17, 19-21 as being unpatentable over the combination of Bojora et al (US Patent No. 3,667,959) and Miura et al (US Patent No. 6,248,512) is not persuasive for the reason set forth in the rejection above.



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The compound taught in Bojora et al is to provide a photosensitive element with an improved image density including reduced heat processing temperature, exposure and processing time. The other additives such as metal or metal complex, and bisphenols reducing agent has been known in the art as to increase sensitivity and as reducing silver ion used in the formation of silver image such as disclosed in both references. Therefore, the additives containing in the composition of the claimed material are old in the art, and the use thereof as in combination would have been found prima facie obvious to the worker of ordinary skill in the art.

The applicants argue that : The photothermographic material of Bojora et al cannot suppress coloration of blank portions during storage in the dark as stated by Mr. Mikoshiba in the MIKOSHIBA DECLARATION. This is in distinction to the claimed invention, wherein the sulfonyl-containing compound of formula (III) remains and functions well in the photothermographic material after the heat development.

The argument is not persuasive since the Declaration submitted on July 6, 2007 is based on the Declarant's opinion, rather than tested results. The improvement of the suppress coloration of blank portions during storage is based on mere assertion. Supposedly, the material shows an improvement of suppress coloration of blank portions during storage, this discovery is based on the use of a known compound taught in Bojora et al which provide a photosensitive material with improved image density including reduced heat processing temperature, exposure and processing time. The worker of ordinary skill in the art would have use the compound disclosed in Bojora et al, and thereby inherently provide a similar results. A newly discovered property does not necessarily mean the product is unobvious, since this property may be inherent in the prior art. In re Best 195 USPQ 430 (CCPA 1977); In re Swineherd 169 USPO 226 (CCA 1971).

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***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tchea  
2007-08-09



Thorl Chea  
Primary Examiner  
Art Unit 1752